REMARKS

We gratefully acknowledge the courtesy of Examiner Jason Kurr during a telephone interview with Clayton L. Satow, attorney for the assignee on October 7, 2008. During that interview, the term "directional" in the context of an audio device was discussed. Examiner Kurr noted that all acoustic devices have some directional characteristics and that, while the claims are read in light of the specification, limitations in the specification are not read into the claims. Examiner Kurr also noted that the bass portion of a directional channel, even if combined with the bass portion of other directional channels, still includes information from the directional channel.

The comments of the applicants below are each preceded by related comments of the examiner (in small, bold type).

DETAILED ACTION

Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scofield (US 6,853,732 B2) in view of Bakgaard (US 4,031,321).

With respect to claim 1, Scofield discloses an audio system including a plurality of channels (fig.3 #54,56) intended to be radiated by an audio device in a predetermined positional relationship to a listener, comprising: a listening area (fig.3 #64), comprising a plurality of listening spaces (flg.3 "spaces occupied by listeners #26"); a directional audio device (fig.3 #58,60), positioned in a first of said listening spaces, close to a head of the listener (fig.3 #26), for radiating first sound waves corresponding to spectral components in a first frequency range of a first of said channels; and a nondirectional audio device (fig.3 #52), positioned inside said listening area and outside said listening space, distant from said listening space, for radiating sound waves corresponding to spectral components in a second frequency range of a second of said channels (col.4 ln.58-63). Scofield does not disclose expressly wherein the first frequency range substantially overlaps with the second frequency range, however Scofield does teach

signals above 250Hz are supplied to speakers 58 and 60 and signals below 250Hz are supplied to speaker 52.

Bakgaard discloses a woofer (fig.1 #2) and tweeter (fig.1 #4) system with a crossover frequency of 500Hz. Bakgaard teaches that in an ideal system the crossover network (fig.l #6) should be able to sharply divide the input signal at 500Hz, however in practice this is not possible. In order to remedy this problem frequency ranges are overlapped as shown in figure 2 to achieve a flat frequency response (col.1 In.53-68, col.2 In.1-4). At the time of the invention it would have been obvious to a person of ordinary skill in the art to overlap frequency ranges of the loudspeaker of Scofield as taught by Bakgaard. The motivation for doing so would have been to achieve a flat frequency response without gaps at the crossover frequency.

With respect to claim 5, Scofield discloses an audio system in accordance with claim 1, wherein said listening area comprises a theater and said first and second listening spaces comprise seating locations within said theater (col.1 ln.33-36).

We respectfully request reconsideration and withdrawal of the rejection of claims 1 and 5 under 35 U.S.C. 103(a) as unpatentable over Scofield (US 6,853,732 B2) in view of Bakgaard (US 4,031,321). Claim 1 recites a directional audio device having at least one of a structure including barriers that cause sound waves to radiate with more amplitude in some directions than in other directions over a wide range of frequencies; or at least two radiating elements radiating sound waves that destructively interfere more in some directions than the sound waves destructively interfere in other directions. No such restrictions are disclosed or suggested by Scofield or Bakgaard. Claim 1 also recites a nondirectional audio device, positioned inside said listening area and outside said first of said listening spaces, distant from said first of said listening spaces, for radiating sound waves corresponding to spectral components in a non-bass frequency range of a second channel. Element 52, identified by the examiner as corresponding to the recited nondirectional audio device is described as a low frequency speaker that receives

the combined left and right signals for frequencies below 250 Hz (col. 4, lines 21 – 25). Claim 5 is dependent on claim 1 and is allowable for at least the same reasons as claim 1.

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scofield (US 6,853,732 B2) in view of Bakgaard (US 4,031,321) and in further view of Iwahara (US 4,199,658).

With respect to claim 2, Scofield discloses an audio system in accordance with claim 1, wherein said directional audio devices comprise a plurality of acoustic drivers (fig.3 #58,60), however does not disclose expressly wherein said acoustic drivers are positioned and arranged to radiate sound waves that interfere destructively at a first predetermined location in space and to interfere nondestructively at a second predetermined location in space.

Iwahara discloses an audio system wherein a plurality of acoustic drivers (fig.1 #1-4) are positioned and arranged to radiate sound waves that interfere destructively at a first predetermined location in space and to interfere nondestructively at a second predetermined location in space (col.1 In.37-68, col.2 In.1-2).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the crosstalk cancellation system of Iwahara in the invention of Scofield. The motivation for doing so would have been to cancel inter-aural interferences between the right and left ears of a listener.

With respect to claim 3, Scofield discloses an audio system in accordance with claim 2 in view of Iwahara, wherein said first predetermined location is in a first listening space and said second predetermined location is in a second listening space (Iwahara: col.1 ln.57-66).

With respect to claim 4, Scofield discloses an audio system in accordance with claim 2 in view of Iwahara, wherein said first predetermined location is proximate a first volume for receiving a first ear of a listener and wherein said second predetermined location is proximate a second volume for receiving a second ear of said listener (Iwahara: col.1 ln.57-66).

The applicants respectfully request the reconsideration and withdrawal of claims 2 – 4 under 35 U.S.C. 103(a) as unpatentable over Scofield (US 6,853,732 B2) in view of Bakgaard (US 4,031,321) and in further view of Iwahara (US 4,199,658). Claims 2 – 4 are directly or indirectly dependent on claim 1 and are allowable for at least the same reasons as claim 1.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable

over Scofield (US 6,853,732 B2) in view of Bakgaard (US 4,031,321) and in further view of Fabry (US 7,164,773 B2).

With respect to claim 6, Scofield discloses an audio system in accordance with claim 1, however does not disclose expressly wherein said listening area comprises a vehicle passenger compartment and said listening locations comprise seating locations within said vehicle passenger compartment.

Fabry discloses an audio system to be mounted within an automobile (see figure).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the audio system of Scofield in the automobile Fabry. The motivation for doing so would have been to provide a virtual sound system within the cabin of a vehicle so as to provide a realistic reproduced sound to a passenger.

The applicants respectfully request the reconsideration and withdrawal of claim 6 under 35 U.S.C. 103(a) as unpatentable over Scofield (US 6,853,732 B2) in view of Bakgaard (US 4,031,321) and in further view of Fabry (US 7,1645,773 B2). Claim 6 is dependent on claim 1 and is allowable for at least the same reasons as claim 1.

New claims 42 to 46 include restriction not taught or suggested by the references of record. The applicants respectfully request the allowance of claims 42 to 46. Support for the new claims can be found at least in Figs. 3A to 3C and 4A to 4C and in corresponding portions of the specification.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this

paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

In view of the foregoing amendments and remarks, we respectfully submit that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Please apply any unpaid charges or credits to deposit account 06-1050, referencing attorney docket no. 02103-0519002.

Respectfully submitted,

Date: November 10, 2008

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